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THE OBLONG WEEVIL (PHYLLOBIUS OBLONGUS L.), A NEW INTRODUCED PEST OF TREES

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The following statement concerning a European weevil recently observed in two limited sections in New York and Ohio has been prepared primarily for the information of State officials. It summarizes available information on the occurrence and habits of the insect, including that assembled from a review of literature. It was prepared by M. W. Blackman, of the Division of Forest Insect Investigations, in cooperation with others, the description and illustration of the adult being contributed by the Division of Insect Identification.

A new introduced pest, Phyllobius oblongus L., has recently come to notice near Rochester, N. Y., and Painesville, O. At present it is not known to occur elsewhere in this country. In the Painesville area it is causing very noticeable but not as yet very injurious defoliation on several species of tree, including elm and maple. The extent of the infestation in central New York is not known, but the one in northern Ohio covers an area of 250 square miles or more. As this area contains thousands of acres of nursery stock, and as the habits of the weevil lend themselves very readily to dissemination in soil surrounding nursery stock, it seems desirable that the responsible officials in the various States be informed regarding this new pest.

Phyllobius oblongus, commonly known in Europe as the oblong leaf weevil, is generally distributed throughout that continent, including the British Isles, and also occurs in Siberia. It has been known to science since the time of Linnaeus. In the European literature references to its injuries can be traced back more than a hundred years, and it may be worthy of note that it seems to have been the cause of more anxiety in those earlier years than more recently. Although references to the oblong weevil are numerous, no really detailed account of its life history and habits is available.

Hosts

The list of trees, the leaves of which are recorded as serving as food for the adults, includes peach, apricot, cherry, apple, pear, prune, plum, almond, hazelnut, alder, elm, oak, maple, beech, birch, and poplar. Trees of the family Rosaceae, which include many of our fruit trees and ornamentals, are especially subject to attach by these beetles.

While many forest trees will have their leaves injured to a certain extent by the oblong weevil, this insect in Europe has proved to be of much more importance in its ravages in young orchards and in nurseries than in the forest. The insects when numerous tend to collect in considerable numbers on certain trees or shrubs, or even on certain branches. An insect having this habit would not be likely to cause great damage in the forest, as it requires several consecutive defoliations to affect a forest tree seriously. Their habit of boring into the flower buds of fruit trees, however, would doubtless prevent or at least reduce the fruit crop.

Seasonal History

From the many brief, fragmentary, and sometimes conflicting reports of its biology, the seasonal history of Phyllobius oblongus seems to be about as follows: The adults appear early in the season, usually in May, and are seen on leaves when these are only partially developed. They prefer small trees and are more injurious on these than on larger ones. They devour the soft portions of the leaves by biting more or less circular holes, and if excessively numerous they eat all but the midrib and main veins. They also bore into and destroy

flower buds. After feeding for some time the female enters the ground (in June in southern England) and deposits her eggs there. The grubs burrow through the soil, and there are said to feed upon the roots of various meadow plants. The winter is probably passed as a full-grown larva, which transforms in early spring and issues from the soil as an adult in May and June.

Another account of the seasonal history, originally offered by Schmidt-Göbel, varies somewhat from this. According to this author the eggs are laid in the buds, the larvae hatch in 8 to 12 days, feed on the buds, and when full grown drop to the ground, burrow into it, and there transform. This account, however, has been discredited by others, although no reports of detailed observations were found.

No matter which of these accounts is correct, it will be readily seen that the immature insects are in the soil during the fall, winter, and early spring, and thus where they occur in nurseries there is great danger of their being introduced into new areas in the soil of nursery stock. As the Painesville region contains thousands of acres in nurseries, this is a real danger.

Control

The European literature contains little in the way of modern control recommendations. Several authors suggest the poisoning of the adults by means of arsenates, but no account of the results of such an application was found. There can be little doubt that arsenic would be at least partially effective.

One author suggests treatment of the soil in winter with kainite, soda nitrate, or other strong fertilizer which might serve the purpose of fertilizer and at the same time kill the immature stages. There is no record of results from this treatment.

It is stated that grafting shoots may be protected by coating them thinly with wax or clay.

In common with other similar weevils, P. oblongus has the habit of dropping to the ground when the branch upon which the adults are feeding or resting is jarred. However, on warm, sunny days they will often fly when disturbed. Taking this habit into account, the principal method of control recommended in European literature is to collect the adults by jarring them into a collecting umbrella or other receptacle and then to destroy them. It is recommended that this be done on cool or cloudy days, or in the early morning hours.

Semitechnical Description

Phyllobius oblongus is a rather slender, moderately shiny snout beetle about one-fifth of an inch (5 mm) in length, the female being stouter and usually a little longer than the male(fig. 1). The wing covers are yellowish to dark reddish brown with a darker vaguely de-

fined stripe along each side, the legs and antennae reddish yellow, and the remainder of the body blackish. The surface is clothed with short, inclined, pale hairs, easily seen (especially on wing covers) with a low-power lens. The snout is short and stout, little longer than wide, and about the same length as the basal portion of the head. The antennal groove is short, broad, directed toward the upper half of the eye, and is partially visible from above. The eye is rounded, convex, and placed far forward on the basal portion of the head. The first segment of the antenna (scape) is elongate and, when folded back, reaches nearly or quite to the front margin of the prothorax. The prothorax is rather small and, as seen from the side, has a straight front margin (i.e., without a lobelike projection opposite the eye). A small, triangular piece (scutellum) fits between the wing covers just behind the prothorax. The wing covers together are considerably wider than the prothorax, the shoulders well developed, the sides subparallel or slightly diverging behind, and each wing cover has 10 rows of closely placed punctures. The femora are toothed, the tooth strongest on the hind legs. The tarsal claws are fused together at the base.

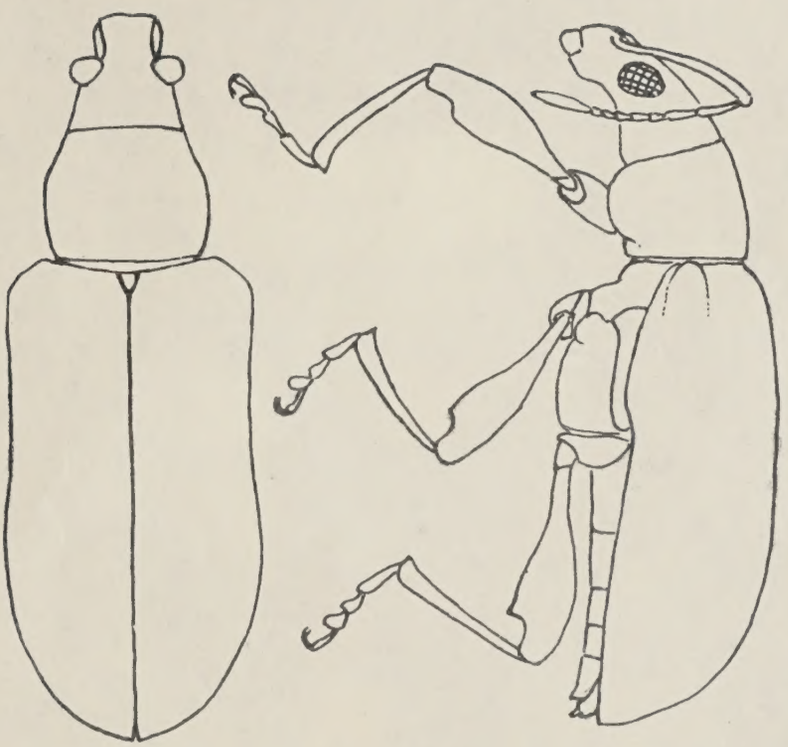

Figure 1.--Outline drawings of male adult oblong weevil (Phyllobius oblongus L.). Magnified about 16 times.